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Rehabilitation and Reintegration Programming Following Female Genital Fistula Surgery: A Scoping Review Protocol

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Title: Rehabilitation and Reintegration Programming Following Female Genital Fistula Surgery: A Scoping Review Protocol

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Abstract

Introduction

Female genital fistula is a debilitating and traumatic injury, largely birth-associated, globally affecting as many as 2 million women, mostly in sub-Saharan Africa. Fistula is associated with significant physical, psychological, and economic consequences. Women often face challenges in reintegrating and resuming their prior roles despite successful surgery. Synthesizing the evidence on services adjunct to fistula surgery and their outcomes is important for developing a strong evidence base to guide service provision and identifying additional research priorities. The objective of this scoping review is to examine the range of rehabilitation and reintegration services provided as adjunct to genital fistula surgery, map the existing programming and outcomes, and identify areas for additional research.

Methods and analysis

Our scoping review is informed by existing methodological frameworks and will be conducted in accordance with PRISMA-ScR guidelines. The search strategy will be applied to nine biomedical, public health, and social science databases. Grey literature will be identified through targeted Google searches and from organizational websites identified as relevant by the UNFPA Campaign to End Fistula. We will iteratively build our search strategy through term harvesting and review, and search reference lists of reports and articles to identify additional studies. Two reviewers will independently screen titles and abstracts, followed by full-text screening of all potentially relevant articles and standardized data extraction. Articles eligible for inclusion will discuss research or programmatic efforts around service provision in adjunct to surgery among females with genital fistula. Data will be presented in summary tables accompanied by narrative description.

Ethics and dissemination

Ethics approval is not required for a scoping review. Our results can be used to inform policy, serve as support for funding and development of reintegration programs, and highlight areas for subsequent research. The results will be presented at relevant international conferences and published in a peer-reviewed journal.

Article Summary:

1. No systematic efforts have been previously carried out to map the rehabilitation and reintegration services provided in adjunct to female genital fistula surgery despite recognition in the literature of significant physical, psychosocial, and economic sequelae of the condition.
2. Our scoping review utilizes an established framework, employs a comprehensive search strategy developed iteratively in conjunction with a medical librarian, and study selection and extraction will be undertaken by content experts.
3. Compiling the evidence on existing programs and outcomes will inform the development of evidence-based public health strategies for supporting women recovering from female genital fistula and inform the measurement of impact of such strategies.
4. No formal assessment of the quality of studies will be conducted, as the goal of a scoping review is to map the range of evidence on a particular topic.
5. The findings of this scoping review will be limited to articles and program reports published in English or French.

Keywords: female genital fistula, supportive care, reintegration, rehabilitation, scoping review

Introduction

Female genital fistula is a debilitating and traumatic injury that affects an estimated 2 million women, mostly in sub-Saharan Africa¹. Primarily due to prolonged and neglected obstructed labor from cephalopelvic disproportion or malpresentation combined with delays in accessing comprehensive emergency obstetric care, up to 100,000 new cases occur each year globally. During the obstructed labor, ischemia from compression of soft vaginal, bladder or rectal tissue between the fetal head and pelvic bone results in ischaemic necrosis, and a fistula is formed upon sloughing of this tissue². Women with fistula experience uncontrollable leakage of urine and/or feces, which contributes to the development of genital sores and infection^{3,4}. In addition to pain and general weakness⁵, women may experience nerve damage, uterine cervix injuries and pelvic bone trauma which present as secondary infertility and gait disorders⁶. For most deliveries resulting in fistula, the baby does not survive⁷. Women with fistula are often stigmatized and marginalized from their families and communities and live in isolation, unable to participate in social, economic, food preparation or religious activities^{5,7}, and report high psychiatric morbidity including depression, which may persist after surgery⁸⁻¹⁰.

Access to obstetric fistula surgery has improved in sub-Saharan Africa overall; however, despite having undergone surgical repair, women may continue to face myriad physical and psychological challenges to resuming their previous roles or adjusting to new circumstances. They may also require further medical care depending on the severity of their injuries and surgical outcomes and require health care access for subsequent pregnancies and births. Longitudinal studies from sub-Saharan Africa have identified risks of adverse outcome following fistula surgery, including fistula recurrence, persistent fistula-related symptoms, subsequent fertility challenges, and adverse perinatal outcomes¹¹⁻¹³. In Guinea, for example, the cumulative incidence of fistula recurrence was 16% at 24 months¹³. In Uganda, by twelve-months post-surgery, one-third of women continued to experience urinary incontinence, 17% reported weakness, and 9% reported general pain¹⁴. In Malawi, only one-fifth of women with reproductive potential were able to become pregnant in the year following surgery¹². Furthermore, experience of persistent physical symptoms or adversity is associated with substantially lower psychosocial health¹⁴. All of these factors limit women's ability to resume their previous roles despite successful surgery, particularly in the context of economic hardship¹⁵. A systematic review of ten qualitative studies from sub-Saharan Africa identified various reintegration needs from the perspectives of both women affected by fistula and health professionals working with this patient population, including health education and counselling¹⁶.

This literature highlights the need for post-surgical reintegration and rehabilitation services; however, there remains a knowledge and practice gap around programming to best assist women to reintegrate into their families and communities after surgery. Preliminary evidence from Nigeria and Eritrea supports short-term facility-based psychological intervention for improving women's mental health^{17,18}, and programming supported by non-governmental organizations often includes counseling, physical therapy, and skills training. Synthesizing research on the reintegration process, evaluation, and service provision is of paramount importance to develop a strong evidence base, which can guide prioritization of service provision to meeting the future health needs of women who have experienced obstetric fistula.

Thus, the objective of this scoping review is to examine the range of rehabilitation and reintegration services provided as adjunct to genital fistula surgery, map the existing programming and outcomes, and identify areas where additional research is necessary.

Methods and analysis

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2
3 The purpose of this scoping review is to understand the extent to which rehabilitation and reintegration
4 services have been provided to women in conjunction with female genital fistula surgery and the
5 outcomes of such programming. The findings from this review will be used to support the evidence-based
6 development of programming for women undergoing surgery for female genital fistula surgery and
7 identify further research needs in this area. A preliminary search for existing reviews on this topic has
8 been conducted in JBISIR, PROSPERO, PubMed, Cochrane Database of Systematic Reviews, EPPI, and
9 Epistemonikos, and no similar systematic or scoping reviews were identified. Given the lack of prior
10 reviews, a scoping review is an appropriate first step to assessing the literature in this area. Our scoping
11 review methodology is informed by the Arskey & O'Malley¹⁹ and Levac²⁰ frameworks and will be
12 conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses
13 (PRISMA-ScR) guidelines.²¹
14
15

16 ***Identifying the Research Question***

17 The objective of this scoping review is to examine the range of rehabilitation and reintegration services
18 provided as adjunct to genital fistula surgery, map the existing programming and outcomes of
19 programming, and identify areas where additional research is necessary. To achieve these objectives, our
20 review targets the following research questions:
21

- 22 1. What rehabilitation and reintegration services are provided as adjunct to genital fistula surgery
23 for women with obstetric, iatrogenic, or traumatic fistula?
- 24 2. What are the components of each rehabilitation and reintegration intervention, and how are they
25 delivered?
- 26 3. What is the impact of each rehabilitation and reintegration intervention on women's physical,
27 psychosocial, and economic status?
- 28 4. What are the authors' recommendations for rehabilitation and reintegration interventions and
29 intervention delivery?
30
31

32 In this review, we include genital fistula from obstetric, iatrogenic, and traumatic etiologies. Obstetric
33 refers to fistula resulting from pressure necrosis due to prolonged obstructed labor; iatrogenic refers to
34 fistula resulting from surgical error, primarily occurring during cesarean section or hysterectomy; and
35 traumatic refers to those fistula resulting from sexual assault.
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38 ***Types of Sources***

39 Sources to be reviewed include biomedical, public health, and social science databases, including PubMed,
40 Embase, Popline, PsycINFO, Web of Science, Sociological Abstracts, Social Services Abstracts, and African
41 Journals Online, the grey literature identified within targeted Google searches and directly from
42 organization websites identified as being relevant by the Campaign to End Fistula Partners (UNFPA)
43 (Appendix 1), and through personal queries with clinical and social service organizations working in fistula
44 research.
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46

47 ***Search Strategy***

48 We will employ a three-step search strategy for identifying published and unpublished studies for our
49 scoping review.
50

51 We will begin by conducting a preliminary search of PubMed to identify key articles on our topic and begin
52 the process of term harvesting, described herein. From these key articles, we will extract text words and
53 MeSH terms from titles, abstracts, and author-supplied keywords to build a comprehensive list of
54 keywords and controlled vocabulary terms, to inform our search strategy development. Next, we will work
55 collaboratively with a medical librarian (JBW) with training and experience in systematic reviews to design
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1
2
3 our search strategy using an iterative process that follows an established search method²². Each potential
4 search term will be tested, with the two primary reviewers examining the first 60 unique results for each
5 term in order to determine that term's relevance and subsequent inclusion in the search strategy. The
6 search strategy will be developed in PubMed and adapted to other databases accordingly, using controlled
7 vocabulary (e.g. MeSH, Emtree, thesaurus terms) where databases allow. A second librarian will peer
8 review the final search strategy using the Peer Review of Electronic Search Strategies (PRESS) guidelines.²³
9

10
11 Thirdly, the reference lists of all included reports and articles will be searched to identify any additional
12 studies. The reviewers will contact authors of primary studies, reviews, and grey literature if further
13 information is desired.
14

15 The search strategy will combine two main concepts: obstetric fistula and social reintegration. Boolean
16 logic will be applied by combining similar key words and controlled vocabulary (e.g. MeSH and Emtree
17 terms) with OR and using AND between the two concepts, for example, ("obstetric fistula" OR
18 "vesicovaginal fistula") AND (reintegration OR rehabilitation). During preliminary searching, we have
19 found a large number of, irrelevant articles related to cancer in two sets of database 31% of our results in
20 Embase and 17% of our results in Web of Science); therefore, an additional concept using cancer-related
21 terms will be added using the NOT term that will exclude these terms from our searches in those two
22 databases. To ensure that this concept exclusion will not eliminate any relevant results, the primary
23 reviewers evaluated the first 100 unique results that would be left out of searches that used this NOT
24 concept. No relevant articles were discovered using this method; thus, we feel confident that this
25 technique will only exclude irrelevant articles. The complete search strategy for all databases can be found
26 in Appendix 2.
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30 In accordance with PRISMA guidelines, no language limits will be used in the search. Date limits will be
31 applied to identify relevant studies as social reintegration for obstetric fistula is a new area of study. To
32 determine which date limits to use, primary reviewers tested searches from various publication date
33 ranges, looking through the first 50 unique results of each time span to judge relevance of the studies
34 included in these dates. Using this method, we chose to include articles from 2000 to the present.
35
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37 ***Study selection***

38 Two primary reviewers (AE & CP) will independently screen titles and abstracts of all articles, followed by
39 full-text screening and data extraction. A third reviewer (AD) will be available to resolve discrepancies.
40 Study screening progress will be documented in a modified PRISMA flow chart (Figure 1). In accordance
41 with established scoping review frameworks,^{19,20} critical appraisal of study quality will not be performed
42 owing to the heterogeneity of results and the multi-tiered aspect of the research question.
43
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45 ***Inclusion and Exclusion Criteria***

46
47 Inclusion and exclusion criteria for selection of eligible studies were developed using the population,
48 concept, context elements proposed for scoping reviews by the Joanna Briggs Institute (Table 1).²⁴ We
49 selected this approach in order to broadly identify all data that is potentially relevant to our objective.
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52 ***Types of participants***

53 Females diagnosed with genital fistula with obstetric, iatrogenic (non-cancer), or traumatic etiology and
54 accessing surgical treatment. No limitations on geography or age will be placed.
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Concept

Research or service provision for all services provided in adjunct to surgery among females diagnosed with genital fistula of obstetric, iatrogenic (non-cancer), or traumatic etiology. Interventions of interest are anticipated to include, but will not be limited to the following: psychological therapy, physical therapy, skills training or other economic empowerment.

The scoping review will be heavily focused on the services provided; however, we will capture any clinical or patient-reported outcomes beyond surgical success including but not limited to: persistent incontinence, pain, weakness, difficulty walking, quality of life, depressive symptoms, self-esteem, relationship stability, and stigma.

Context

No contextual limitations will be placed on the scoping review; however, we are unable to review articles written in languages other than English and French. Due to the geographic distribution of female genital fistula, we anticipate that the majority of the evidence will originate in sub-Saharan Africa.

Table 1. Population, Concept, Context for Identification of Eligible Studies

Criteria	Description
Population	Females undergoing surgery for genital fistula Fistula etiologies: obstetric, iatrogenic (non-cancer), traumatic All ages
Concept	Any research or service provision in addition to surgery; no limitations on intervention type Clinical or patient-reported outcomes beyond surgical success Studies or reports including original research or program data
Context	All contexts; articles written in English or French

Extraction of results

We have developed a draft charting table (Table 2) to record key information from each publication or report. The extraction form will be pilot tested by each of the two primary reviewers with several studies to ensure that all relevant data is extracted and will be updated if additional relevant variables are identified.

Table 2. Data charting domains and descriptions to be used for data extraction

Domain/subdomain	Description
Article details	
Article citation	Citation details of studies or report.
Article type	Study type including empirical research studies, case studies or program reports.
Country	Country the article is from.
Study details	
Study design	Study design of empirical research articles, or evaluation design for program reports.
Participants	Characteristics of the study or program participants.

Intervention	Description of the intervention.
Intervention mechanism	Theory of change of intervention.
Intervention structure	Detailed intervention components, delivery and facilitators.
Intervention duration	Duration of intervention
Comparison	Description of any comparison groups.
Study outcomes and measures	List of outcomes and other measures assessed in study or program evaluation.
Findings	Main results of the study.
Recommendations	Authors recommendations based on findings or experiences.

Data synthesis

We will present the search and screening flow process (Figure 1). The findings from the scoping review will be presented in a table summarizing the information of each of the included studies to highlight year of the literature, countries of origin, intervention component, and research methods, following the general format of our charting table (Table 2). Additionally, we will present participant outcomes by type of intervention component, and by fistula etiology, if possible. Narrative summaries of each of these findings will accompany the figures/tables. Two reviewers (AE and CP) will thematically analyze the data within each of the subdomains outlined in Table 2, working together to consolidate the findings through consensus. Additional content experts with knowledge of obstetric fistula in global contexts (AD, SO, JB, AK, JKB) will be available to provide guidance during this step. The text will describe how the findings of the scoping review relate to the review objective and respond to each of the specific research questions. We will then discuss our recommendations for future research and next steps.

Ethics and dissemination

No ethical review is required for a scoping review of the literature; thus, we have not sought ethics approval for our review.

The proposed scoping review will help in understanding and describing what is known and unknown about rehabilitation and social reintegration of women following genital fistula surgery. We know that as a consequence of fistula, women are often stigmatized and marginalized from their community, with high rates of depression that persist even after surgical repair. While access to surgical care has improved, there is less known about the approach to post-surgical social services, including reintegration and rehabilitation. While there is a call in the literature for the need of post-surgical reintegration services, there is a dearth of information describing best practices or detailing the specific requirements needed for a successful program.

Results from this scoping review will be useful in developing social reintegration projects in areas where fistula projects are ongoing. The results of this review can be used to inform policy and serve as support for funding and development of reintegration programs. Furthermore, the results can highlight areas or future research to pursue and help in building protocols for post-surgical rehabilitation and reintegration programs throughout contexts where fistula is prevalent.

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3 The study may be limited by including only articles published in English and French as study eligibility
4 criteria and the lack of published articles on this topic. However, our scoping review will also include a
5 systematic approach to reviewing the gray literature, in hopes of capturing all relevant information. Even
6 in finding a deficit of published information, this scoping review may be a call for future published research
7 in the area of social reintegration and rehabilitation of women following genital fistula surgery.
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Authors' contributions: AE, JB, SO and JBa conceived the project. AE, CP, and JBW drafted the protocol. AE, CP, AD, JBW SO, JBy, AK, and JK revised the protocol. All authors agreed upon the final protocol version.

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Competing interests statement. The authors declare no competing or conflicts of interest.

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3 **Appendix 1.** List of organizational websites identified by the Campaign to End Fistula Partners (UNFPA)²⁵
4 that will be searched for relevant content.
5

- 6 • Aden Hospital (Yemen)
- 7 • African Medical and Research Foundation
- 8 • American College of Nurse-Midwives
- 9 • Babbar Ruga Fistula Hospital (Nigeria)
- 10 • Bangladesh Medical Association
- 11 • Bill & Melinda Gates Institute for Population and Reproductive Health
- 12 • Bugando Medical Center (United Republic of Tanzania) CARE
- 13 • Centers for Disease Control and Prevention (CDC)
- 14 • Centre Mère-Enfant (Chad)
- 15 • Centre National de Référence en Fistule Obstétricale (Niger)
- 16 • Centre National de Santé de la Reproduction & du Traitement des Fistules (Chad)
- 17 • Columbia University's Averting Maternal Death and Disability Program (AMDD)
- 18 • Comprehensive Community Based Rehabilitation in Tanzania (CCBRT)
- 19 • CURE International Hospital of Kabul (Afghanistan)
- 20 • Direct Relief International
- 21 • Dr. Abbo's National Fistula and Urogynaecology Center (Sudan)
- 22 • East Central and Southern Africa Association of Obstetrical and Gynecological Societies
- 23 • EngenderHealth
- 24 • Equilibres & Populations
- 25 • Eritrea Women's Project
- 26 • Family Care International
- 27 • Fistula e.V.
- 28 • Fistula Foundation
- 29 • Fistula Foundation Nigeria
- 30 • Freedom from Fistula Foundation
- 31 • Friends of UNFPA
- 32 • Geneva Foundation for Medical Education and Research
- 33 • Girls' Globe
- 34 • Governess Films
- 35 • Gynocare Fistula Center (Kenya)
- 36 • Hamlin Fistula (Ethiopia)
- 37 • Healing Hands of Joy (Ethiopia)
- 38 • Health and Development International
- 39 • Health Poverty Action (Sierra Leone)
- 40 • Hope Again Fistula Support Organization (Uganda)
- 41 • Human Rights Watch
- 42 • Institut de Formation et de Recherche en Urologie et Santé de la Famille (IFRU-SF) (Senegal)
- 43 • International Confederation of Midwives (ICM)
- 44 • International Continence Society
- 45 • International Federation of Gynecology and Obstetrics (FIGO)
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- International Forum of Research Donors (IFORD)
 - International Nepal Fellowship (INF)
 - International Planned Parenthood Federation (IPPF)
 - International Society of Obstetric Fistula Surgeons (ISOFS)
 - International Urogynecological Association (IUGA)
 - International Women's Health Coalition, Islamic Development Bank
 - Johns Hopkins Bloomberg School of Public Health
 - Johnson & Johnson
 - Kupon Foundation
 - Lake Tanganyika Floating Health Clinic
 - Ligue d'Initiative et de Recherche Active Pour la Santé et l'Education de la Femme (LIRASEF, Cameroon)
 - London School of Hygiene and Tropical Medicine
 - Maputo Central Hospital (Mozambique)
 - Médecins du Monde
 - Médecins Sans Frontières (MSF)
 - Mercy Ships
 - Moi University (Kenya)
 - Monze Hospital (Zambia)
 - Mulago Hospital/Medical School (Uganda)
 - National Obstetric Fistula Centre, Abakiliki (Nigeria)
 - Obstetrical and Gynecological Society of Bangladesh
 - One by One
 - Operation Fistula
 - Pakistan National Forum on Women's Health
 - Pan African Urological Surgeons' Association (PAUSA)
 - Population Media Center
 - Psychology Beyond Borders
 - Regional Prevention of Maternal Mortality Network (RPMM, Ghana)
 - Royal College of Obstetricians and Gynaecologists (RCOG)
 - Sana'a Hospital (Yemen)
 - Selian Fistula Project (United Republic of Tanzania)
 - Société Africaine des Gynécologues-Obstétriciens (SAGO)
 - Société Internationale d'Urologiel
 - Solidarité Femmes Africaines (SOLFA)
 - The Association for the Rehabilitation and Re-orientation of Women for Development (TERREWODE, Uganda)
 - Uganda Childbirth Injury Fund
 - United Nations Population Fund (UNFPA)
 - United States Agency for International Development (USAID)
 - University of Aberdeen
 - University Teaching Hospital of Yaoundé (Cameroon)
 - Virgin Unite

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- White Ribbon Alliance
 - Women and Health Alliance International (WAHA)
 - Women's Health Organization International (WHOI)
 - Women's Hope International (WHI)
 - Women's Missionary Society of the African Methodist Episcopal Church
 - World Health Organization (WHO)
 - World Vision
 - Worldwide Fistula Fund
 - Zonta International

For peer review only

Appendix 2. Search strategy for all databases. All searches will be limited to 2000-present.

Name of database	Search strategy
PubMed	<p> ("obstetric fistula"[tiab] OR "obstetric fistulae"[tiab] OR "vaginal fistula"[tiab] OR "vaginal fistulae"[tiab] OR "vesicovaginal fistula"[tiab] OR "vesicovaginal fistulae"[tiab] OR "vesico-vaginal fistulae"[tiab] OR "obstetric fistulas"[tiab] OR "vaginal fistulas"[tiab] OR "vesicovaginal fistulas"[tiab] OR "vesico-vaginal fistulas"[tiab] OR "Vaginal Fistula"[Mesh] OR "ureterovaginal fistula"[tiab] OR "rectovaginal fistula"[tiab] OR "genital tract fistula"[tiab] OR "urinary fistula"[tiab] OR "uro-vaginal fistula"[tiab] OR "recto-vaginal fistula"[tiab] OR "ureterovaginal fistulae"[tiab] OR "rectovaginal fistulae"[tiab] OR "genital tract fistulae"[tiab] OR "urinary fistulae"[tiab] OR "ureterovaginal fistulas"[tiab] OR "rectovaginal fistulas"[tiab] OR "genital tract fistulas"[tiab] OR "urinary fistulas"[tiab] OR "uro-vaginal fistulas"[tiab] OR "recto-vaginal fistulas"[tiab] OR "bladder fistula"[tiab] OR "bladder fistulae"[tiab] OR "bladder fistulas"[tiab] OR "cystocolic fistula"[tiab] OR "cystocolic fistulae"[tiab] OR "cystocolic fistulas"[tiab] OR "cystovaginal fistula"[tiab] OR "cystovaginal fistulae"[tiab] OR "cystovaginal fistulas"[tiab] OR "ureter fistula"[tiab] OR "ureter fistulae"[tiab] OR "ureter fistulas"[tiab] OR "urethra fistula"[tiab] OR "urethra fistulae"[tiab] OR "urethra fistulas"[tiab]) </p> <p>AND</p> <p> (rehabilitation[tiab] OR "quality of life"[tiab] OR "Quality of Life"[Mesh] OR reintegration[tiab] OR rehabilitating[tiab] OR reintegrating[tiab] OR reintegrated[tiab] OR counseling[tiab] OR exercise[tiab] OR exercises[tiab] OR education[tiab] OR physiotherapy[tiab] OR knowledge[tiab] OR "self esteem"[tiab] OR "mental health"[tiab] OR "mental well-being"[tiab] OR psychological[tiab] OR behavioral[tiab] OR coping[tiab] OR depression[tiab] OR anxiety[tiab] OR suicidal[tiab] OR suicide[tiab] OR distress[tiab] OR stress[tiab] OR social[tiab] OR recovery[tiab] OR "skills training"[tiab] OR "gender-based"[tiab] OR power[tiab] OR "Power (Psychology)"[Mesh] OR empower[tiab] OR empowered[tiab] OR empowerment[tiab] OR livelihood[tiab] OR microfinance[tiab] OR financial[tiab] OR finance[tiab] OR "Socioeconomic Factors"[Mesh] OR "self help"[tiab] OR "self-help"[tiab] OR "Self Care"[Mesh] OR "Self-Management"[Mesh] OR training[tiab] OR mobility[tiab] OR independence[tiab] OR decision-making[tiab] OR respect[tiab]) </p>
Embase	((('obstetric fistula':ab,ti OR 'obstetric fistulae':ab,ti OR 'vaginal fistula':ab,ti OR 'vaginal fistulae':ab,ti OR 'vesicovaginal fistula':ab,ti OR 'vesicovaginal fistulae':ab,ti OR 'vesico-vaginal fistula':ab,ti OR 'vesico-vaginal fistulae':ab,ti OR 'obstetric fistulas':ab,ti OR 'vaginal fistulas':ab,ti OR 'vesicovaginal fistulas':ab,ti OR 'vesico-vaginal fistulas':ab,ti OR 'urinary tract fistula'/exp OR 'rectovaginal fistula'/exp OR 'ureterovaginal fistula':ab,ti OR 'rectovaginal fistula':ab,ti OR 'genital tract fistula':ab,ti OR 'urinary fistula':ab,ti OR 'uro-vaginal fistula':ab,ti OR 'recto-vaginal fistula':ab,ti OR 'ureterovaginal fistulae':ab,ti OR 'rectovaginal fistulae':ab,ti OR 'genital tract fistulae':ab,ti OR

	<p>'urinary fistulae':ab,ti OR 'uro-vaginal fistulae':ab,ti OR 'recto-vaginal fistulae':ab,ti OR 'ureterovaginal fistulas':ab,ti OR 'rectovaginal fistulas':ab,ti OR 'genital tract fistulas':ab,ti OR 'urinary fistulas':ab,ti OR 'uro-vaginal fistulas':ab,ti OR 'recto-vaginal fistulas':ab,ti OR 'bladder fistula':ab,ti OR 'bladder fistulae':ab,ti OR 'bladder fistulas':ab,ti OR 'cystocolic fistula':ab,ti OR 'cystocolic fistulae':ab,ti OR 'cystocolic fistulas':ab,ti OR 'cystovaginal fistula':ab,ti OR 'cystovaginal fistulae':ab,ti OR 'cystovaginal fistulas':ab,ti OR 'ureter fistula':ab,ti OR 'ureter fistulae':ab,ti OR 'ureter fistulas':ab,ti OR 'urethra fistula':ab,ti OR 'urethra fistulae':ab,ti OR 'urethra fistulas':ab,ti)</p> <p>AND</p> <p>(rehabilitation:ab,ti OR 'quality of life':ab,ti OR reintegration:ab,ti OR rehabilitating:ab,ti OR reintegrating:ab,ti OR reintegrated:ab,ti OR counseling:ab,ti OR exercise:ab,ti OR exercises:ab,ti OR education:ab,ti OR physiotherapy:ab,ti OR knowledge:ab,ti OR 'self esteem':ab,ti OR 'mental health':ab,ti OR 'mental well-being':ab,ti OR psychological:ab,ti OR behavioral:ab,ti OR coping:ab,ti OR depression:ab,ti OR anxiety:ab,ti OR suicidal:ab,ti OR suicide:ab,ti OR distress:ab,ti OR stress:ab,ti OR social:ab,ti OR recovery:ab,ti OR 'skills training':ab,ti OR 'gender-based':ab,ti OR power:ab,ti OR 'empowerment'/exp OR empower:ab,ti OR empowered:ab,ti OR empowerment:ab,ti OR livelihood:ab,ti OR microfinance:ab,ti OR financial:ab,ti OR finance:ab,ti OR 'self help':ab,ti OR 'self-help':ab,ti OR 'self care'/exp OR training:ab,ti OR mobility:ab,ti OR independence:ab,ti OR decision-making:ab,ti OR respect:ab,ti OR 'social status'/exp))</p> <p>NOT</p> <p>(cancer:ab,ti OR 'neoplasm'/exp OR prostate:ab,ti OR 'prostate'/exp OR hypospadias:ab,ti OR 'hypospadias'/exp OR penile:ab,ti OR transgender:ab,ti OR 'gender confirming':ab,ti)</p>
Web of Science	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p>

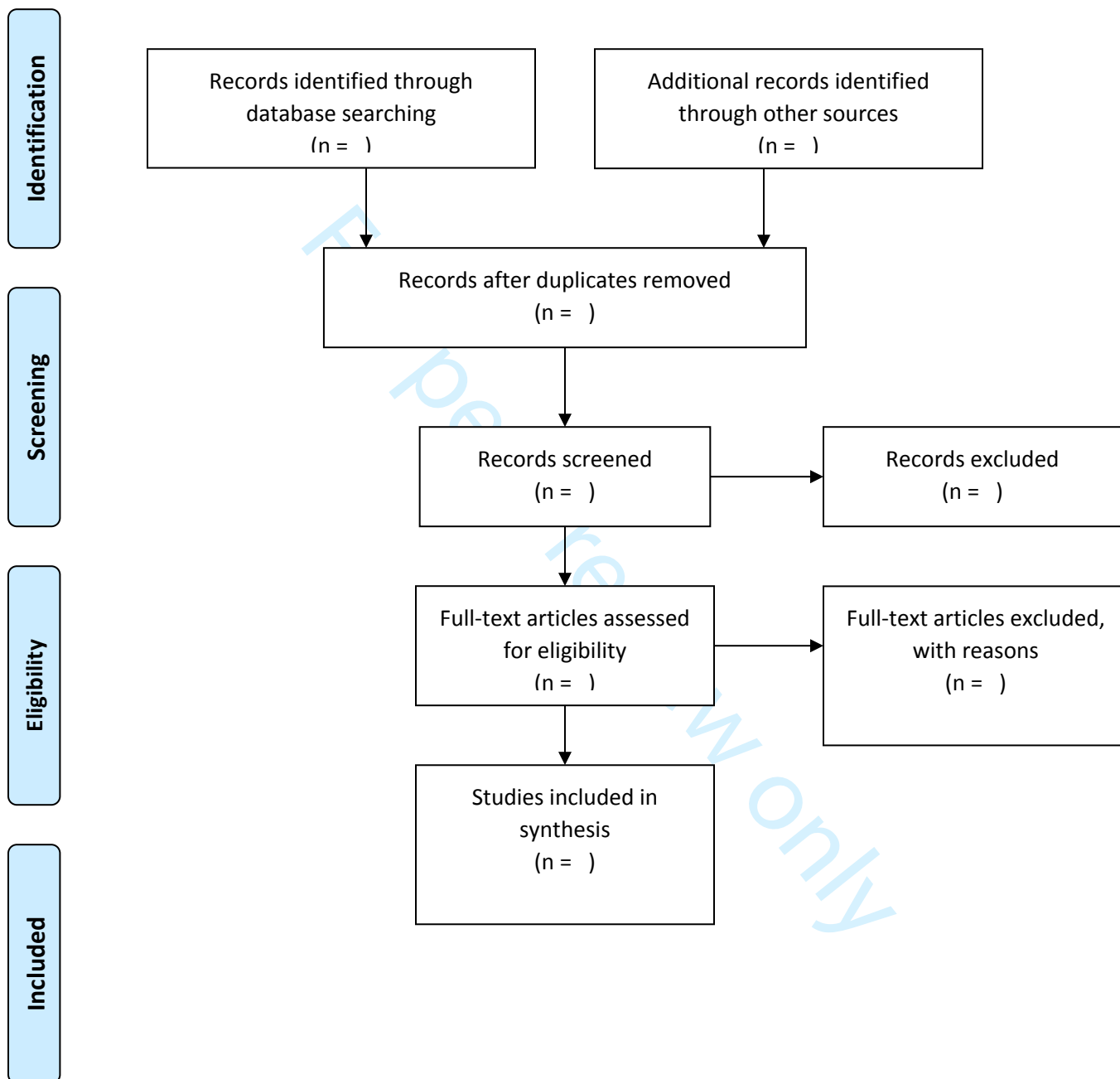
	<p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR socioeconomic))</p> <p>NOT</p> <p>(cancer OR prostate OR hypospadias OR hypospadias OR penile OR transgender OR "gender confirming")</p>
Popline	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR socioeconomic)</p>
PsycINFO	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR</p>

	<p>"ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR MAINSUBJECT.EXACT("Quality of Life") OR MAINSUBJECT.EXACT("Empowerment") OR MAINSUBJECT.EXACT("Interpersonal Control"))</p>
<p>Sociological Abstracts & Social Services Abstracts</p>	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social</p>

	<p>OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR MAINSUBJECT.EXACT("Power") OR MAINSUBJECT.EXACT("Empowerment") OR MAINSUBJECT.EXACT("Social Power") OR MAINSUBJECT.EXACT("Quality of Life") OR MAINSUBJECT.EXACT("Rehabilitation"))</p>
African Journals Online	<p>fistula AND (rehabilitation OR reintegration OR education OR empowerment OR empower OR "self help" OR "quality of life" OR recovery OR reintegrated OR reintegrating OR power OR training OR coping OR mental OR decision OR counseling OR distress OR social)</p>

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Fig 1. PRISMA flowchart for selection of eligible studies and program reports.^{17 26}



BMJ Open

Rehabilitation and Reintegration Programming Adjunct to Female Genital Fistula Surgery: A Scoping Review Protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2018-027991.R1
Article Type:	Protocol
Date Submitted by the Author:	22-Jul-2019
Complete List of Authors:	El Ayadi, Alison; University of California, San Francisco, Department of Obstetrics, Gynecology and Reproductive Sciences Painter, Caitlyn; Kaiser Permanente, Department of Obstetrics and Gynecology; Urogynecology Division; University of California, San Francisco, Department of Obstetrics, Gynecology and Reproductive Sciences Delamou , Alexandre ; Gamal Abdel Nasser University, Department of Public Health Barr-Walker, Jill; University of California, San Francisco , ZSFG Library Obore, Susan; Mulago National Referral Hospital, Department of Obstetrics and Gynaecology Byamugisha , Josaphat; Makerere University, Department of Obstetrics and Gynecology ; Mulago National Referral Hospital Korn, Abner; University of California, San Francisco, Department of Obstetrics, Gynecology and Reproductive Sciences Barageine, Justus; Makerere University College of Health Sciences, Department of Obstetrics and Gynaecology; Uganda Christian University, Department of Maternal and Child Health
Primary Subject Heading:	Global health
Secondary Subject Heading:	Health services research
Keywords:	female genital fistula, supportive care, reintegration, rehabilitation, scoping review

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Manuscripts

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3 1 **Title:** Rehabilitation and Reintegration Programming Adjunct to Female Genital Fistula Surgery: A Scoping
4 2 Review Protocol
5 3

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42 40 **Word count:** 2453
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3 44 **Abstract**
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5 46 *Introduction*

6 47 Female genital fistula is a debilitating traumatic injury, largely birth-associated, globally affecting up to 2
7 48 million women, mostly in sub-Saharan Africa. Fistula has significant physical, psychological, and economic
8 49 consequences. Women often face challenges in reintegrating and resuming prior roles despite successful
9 50 surgery. Synthesizing the evidence on services adjunct to fistula surgery and their outcomes is important
10 51 for developing the evidence base for best practices and identifying research priorities. This scoping review
11 52 seeks to examine the range of rehabilitation and reintegration services provided as adjunct to genital
12 53 fistula surgery, map the existing programming and outcomes, and identify areas for additional research.
13 54

14 55 *Methods and analysis*

15 56 Our scoping review is informed by existing methodological frameworks and will be conducted in
16 57 accordance with PRISMA-ScR guidelines. The search strategy will be applied to nine biomedical, public
17 58 health, and social science databases. The initial search was completed on September 27, 2018. Grey
18 59 literature will be identified through targeted Google searches and from organizational websites identified
19 60 as relevant by the UNFPA Campaign to End Fistula. We will iteratively build our search strategy through
20 61 term harvesting and review, and search reference lists of reports and articles to identify additional studies.
21 62 Two reviewers will independently screen titles and abstracts, followed by full-text screening of all
22 63 potentially relevant articles and standardized data extraction. Articles eligible for inclusion will discuss
23 64 research or programmatic efforts around service provision in adjunct to surgery among females with
24 65 genital fistula. Data will be presented in summary tables accompanied by narrative description.
25 66

26 67 *Ethics and dissemination*

27 68 Ethics approval is not required for a scoping review. Our results can be used to inform policy, serve as
28 69 support for funding and development of reintegration programs, and highlight areas for subsequent
29 70 research. Results will be disseminated at relevant conferences and published in a peer-reviewed journal.
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Article Summary:

1. No systematic efforts have been previously carried out to map the rehabilitation and reintegration services provided in adjunct to female genital fistula surgery despite recognition in the literature of significant physical, psychosocial, and economic sequelae of the condition.
2. Our scoping review utilizes an established framework, employs a comprehensive search strategy developed iteratively in conjunction with a medical librarian, and study selection and extraction will be undertaken by content experts.
3. Compiling the evidence on existing programs and outcomes will inform the development of evidence-based public health strategies for supporting women recovering from female genital fistula and inform the measurement of impact of such strategies.
4. No formal assessment of the quality of studies will be conducted, as the goal of a scoping review is to map the range of evidence on a particular topic.
5. The findings of this scoping review will be limited to articles and program reports published in English or French.

Keywords: female genital fistula, supportive care, reintegration, rehabilitation, scoping review

91 Introduction

92
93 Female genital fistula is a debilitating and traumatic injury that affects an estimated 2 million women,
94 mostly in sub-Saharan Africa¹. Primarily due to prolonged and neglected obstructed labor from
95 cephalopelvic disproportion or malpresentation combined with delays in accessing comprehensive
96 emergency obstetric care, up to 100,000 new cases occur each year globally. During the obstructed labor,
97 ischemia from compression of soft vaginal, bladder or rectal tissue between the fetal head and pelvic bone
98 results in ischaemic necrosis, and a fistula is formed upon sloughing of this tissue². Women with fistula
99 experience uncontrollable leakage of urine and/or feces, which contributes to the development of genital
100 sores and infection^{3,4}. In addition to pain and general weakness⁵, women may experience nerve damage,
101 uterine cervix injuries and pelvic bone trauma which present as secondary infertility and gait disorders⁶.
102 For most deliveries resulting in fistula, the baby does not survive⁷. Women with fistula are often
103 stigmatized and marginalized from their families and communities and live in isolation, unable to
104 participate in social, economic, food preparation or religious activities^{5,7}, and report high psychiatric
105 morbidity including depression, which may persist after surgery⁸⁻¹⁰.

106
107 Access to obstetric fistula surgery has improved in sub-Saharan Africa overall; however, despite having
108 undergone surgical repair, women may continue to face myriad physical and psychological challenges to
109 resuming their previous roles or adjusting to new circumstances. They may also require further medical
110 care depending on the severity of their injuries and surgical outcomes and require health care access for
111 subsequent pregnancies and births. Longitudinal studies from sub-Saharan Africa have identified risks of
112 adverse outcome following fistula surgery, including fistula recurrence, persistent fistula-related
113 symptoms, subsequent fertility challenges, and adverse perinatal outcomes¹¹⁻¹³. In Guinea, for example,
114 the cumulative incidence of fistula recurrence was 16% at 24 months¹³. In Uganda, by twelve-months
115 post-surgery, one-third of women continued to experience urinary incontinence, 17% reported weakness,
116 and 9% reported general pain¹⁴. In Malawi, only one-fifth of women with reproductive potential were able
117 to become pregnant in the year following surgery¹². Furthermore, experience of persistent physical
118 symptoms or adversity is associated with substantially lower psychosocial health¹⁴. All of these factors
119 limit women's ability to resume their previous roles despite successful surgery, particularly in the context
120 of economic hardship¹⁵. A systematic review of ten qualitative studies from sub-Saharan Africa identified
121 various reintegration needs from the perspectives of both women affected by fistula and health
122 professionals working with this patient population, including health education and counselling¹⁶.

123
124 This literature highlights the need for post-surgical reintegration and rehabilitation services; however,
125 there remains a knowledge and practice gap around programming to best assist women to reintegrate
126 into their families and communities after surgery. Preliminary evidence from Nigeria and Eritrea supports
127 short-term facility-based psychological intervention for improving women's mental health^{17,18}, and
128 programming supported by non-governmental organizations often includes counseling, physical therapy,
129 and skills training. Synthesizing research on the reintegration process, evaluation, and service provision is
130 of paramount importance to develop a strong evidence base, which can guide prioritization of service
131 provision to meeting the future health needs of women who have experienced obstetric fistula.

132
133 Thus, the objective of this scoping review is to examine the range of rehabilitation and reintegration
134 services provided as adjunct to genital fistula surgery, map the existing programming and outcomes, and
135 identify areas where additional research is necessary.

136 Methods and analysis

1
2
3 139 The purpose of this scoping review is to understand the extent to which rehabilitation and reintegration
4 140 services have been provided to women in conjunction with female genital fistula surgery and the
5 141 outcomes of such programming. The findings from this review will be used to support the evidence-based
6 142 development of programming for women undergoing surgery for female genital fistula surgery and
7 143 identify further research needs in this area. A preliminary search for existing reviews on this topic has
8 144 been conducted in JBISIR, PROSPERO, PubMed, Cochrane Database of Systematic Reviews, EPPI, and
9 145 Epistemonikos, and no similar systematic or scoping reviews were identified. Given the lack of prior
10 146 reviews, a scoping review is an appropriate first step to assessing the literature in this area. Our scoping
11 147 review methodology is informed by the Arskey & O'Malley¹⁹ and Levac²⁰ frameworks and will be
12 148 conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses
13 149 (PRISMA-ScR) guidelines.²¹
14 150

151 ***Patient and Public Involvement***

152 Patients and or/public were not involved in the design or development of this protocol and research
153 questions. Results of this study will not be disseminated to study participants.
154

155 ***Identifying the Research Question***

156 The objective of this scoping review is to examine the range of rehabilitation and reintegration services
157 provided as adjunct to genital fistula surgery, map the existing programming and outcomes of
158 programming, and identify areas where additional research is necessary. To achieve these objectives, our
159 review targets the following research questions:

- 160 1. What rehabilitation and reintegration services are provided as adjunct to genital fistula surgery
161 for women with obstetric, iatrogenic, or traumatic fistula?
- 162 2. What are the components of each rehabilitation and reintegration intervention, and how are they
163 delivered?
- 164 3. What is the impact of each rehabilitation and reintegration intervention on women's physical,
165 psychosocial, and economic status?
- 166 4. What are the authors' recommendations for rehabilitation and reintegration interventions and
167 intervention delivery?
- 168 5. What are the areas of research gaps and what topics should future research focus on?
169

170 In this review, we include genital fistula from obstetric, iatrogenic, and traumatic etiologies. Obstetric
171 refers to fistula resulting from pressure necrosis due to prolonged obstructed labor; iatrogenic refers to
172 fistula resulting from surgical error, primarily occurring during cesarean section or hysterectomy; and
173 traumatic refers to those fistula resulting from sexual assault.
174

175 ***Types of Sources***

176 Sources to be reviewed include biomedical, public health, and social science databases, including PubMed,
177 Embase, Popline, PsycINFO, Web of Science, Sociological Abstracts, Social Services Abstracts, and African
178 Journals Online, the grey literature identified within targeted Google searches and directly from
179 organization websites identified as being relevant by the Campaign to End Fistula Partners (UNFPA)
180 (Appendix 1), and through personal queries with clinical and social service organizations working in fistula
181 research. All data and articles will be managed within Endnote citation software.
182

183 ***Search Strategy***

184 We will employ a three-step search strategy for identifying published and unpublished studies for our
185 scoping review. An initial search was performed on September 27, 2018.
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3 187 We will begin by conducting a preliminary search of PubMed to identify key articles on our topic and begin
4 188 the process of term harvesting, described herein. From these key articles, we will extract text words and
5 189 MeSH terms from titles, abstracts, and author-supplied keywords to build a comprehensive list of
6 190 keywords and controlled vocabulary terms, to inform our search strategy development. Next, we will work
7 191 collaboratively with a medical librarian (JBW) with training and experience in systematic reviews to design
8 192 our search strategy using an iterative process that follows an established search method²². Each potential
9 193 search term will be tested, with the two primary reviewers examining the first 60 unique results for each
10 194 term in order to determine that term's relevance and subsequent inclusion in the search strategy. The
11 195 search strategy will be developed in PubMed and adapted to other databases accordingly, using controlled
12 196 vocabulary (e.g. MeSH, Emtree, thesaurus terms) where databases allow. A second librarian will peer
13 197 review the final search strategy using the Peer Review of Electronic Search Strategies (PRESS) guidelines.²³
14 198

15 199 Thirdly, the reference lists of all included reports and articles will be searched to identify any additional
16 200 studies. The reviewers will contact authors of primary studies, reviews, and grey literature if further
17 201 information is desired.
18 202

19 203 The search strategy will combine two main concepts: obstetric fistula and social reintegration. Boolean
20 204 logic will be applied by combining similar key words and controlled vocabulary (e.g. MeSH and Emtree
21 205 terms) with OR and using AND between the two concepts, for example, ("obstetric fistula" OR
22 206 "vesicovaginal fistula") AND (reintegration OR rehabilitation). During preliminary searching, we have
23 207 found a large number of, irrelevant articles related to cancer in two sets of database 31% of our results in
24 208 Embase and 17% of our results in Web of Science); therefore, an additional concept using cancer-related
25 209 terms will be added using the NOT term that will exclude these terms from our searches in those two
26 210 databases. To ensure that this concept exclusion will not eliminate any relevant results, the primary
27 211 reviewers evaluated the first 100 unique results that would be left out of searches that used this NOT
28 212 concept. No relevant articles were discovered using this method; thus, we feel confident that this
29 213 technique will only exclude irrelevant articles. The complete search strategy for all databases can be found
30 214 in Appendix 2.
31 215

32 216 In accordance with PRISMA guidelines, no language limits will be used in the search. Date limits will be
33 217 applied to identify relevant studies as social reintegration for obstetric fistula is a reasonably new area of
34 218 study. To determine which date limits to use, primary reviewers tested searches from various publication
35 219 date ranges, looking through the first 50 unique results of each time span to judge relevance of the studies
36 220 included in these dates. Using this method, we chose to include articles from 2000 through 2018.
37 221

38 222 ***Study selection***

39 223 Two primary reviewers (AE & CP) will independently screen titles and abstracts of all articles, followed by
40 224 full-text screening and data extraction. A third reviewer (AD) will be available to resolve discrepancies and
41 225 will ultimately determine if the study meets inclusion criteria for data extraction. Study screening progress
42 226 will be documented in a modified PRISMA flow chart (Figure 1). In accordance with established scoping
43 227 review frameworks,^{19,20} critical appraisal of study quality will not be performed owing to the heterogeneity
44 228 of results and the multi-tiered aspect of the research question.
45 229

46 230 ***Inclusion and Exclusion Criteria***

47 231

232 Inclusion and exclusion criteria for selection of eligible studies were developed using the population,
 233 concept, context elements proposed for scoping reviews by the Joanna Briggs Institute (Table 1).²⁴ We
 234 selected this approach in order to broadly identify all data that is potentially relevant to our objective.

235 *Types of participants*

236 Females diagnosed with genital fistula with obstetric, iatrogenic (non-cancer), or traumatic etiology and
 237 accessing surgical treatment. No limitations on geography or age will be placed.

238 *Concept*

239 Research or service provision for all services provided in adjunct to surgery among females diagnosed with
 240 genital fistula of obstetric, iatrogenic (non-cancer), or traumatic etiology. Interventions of interest are
 241 anticipated to include but will not be limited to the following: psychological therapy, physical therapy,
 242 skills training or other economic empowerment.

243 The scoping review will be heavily focused on the services provided; however, we will capture any clinical
 244 or patient-reported outcomes beyond surgical success including but not limited to: persistent
 245 incontinence, pain, weakness, difficulty walking, quality of life, depressive symptoms, self-esteem,
 246 relationship stability, and stigma.

247 *Context*

248 No contextual limitations will be placed on the scoping review; however, we are unable to review articles
 249 written in languages other than English and French. Due to the geographic distribution of female genital
 250 fistula, we anticipate that the majority of the evidence will originate in sub-Saharan Africa.

251 **Table 1. Population, Concept, Context for Identification of Eligible Studies**

252 <i>Criteria</i>	253 <i>Description</i>
254 Population	255 Females undergoing surgery for genital fistula 256 Fistula etiologies: obstetric, iatrogenic (non-cancer), traumatic 257 All ages
258 Concept	259 Any research or service provision in addition to surgery; no limitations on intervention 260 type 261 Clinical or patient-reported outcomes beyond surgical success 262 Studies or reports including original research or program data
263 Context	264 All contexts; articles written in English or French

265 *Extraction of results*

266 We have developed a draft charting table (Table 2) to record key information from each publication or
 267 report. The extraction form will be pilot tested by each of the two primary reviewers with several studies
 268 to ensure that all relevant data is extracted and will be updated if additional relevant variables are
 269 identified.

270 **Table 2. Data charting domains and descriptions to be used for data extraction**

271 Domain/subdomain	272 Description
273 Article details	
274 Article citation	275 Citation details of studies or report.

Article type	Study type including empirical research studies, case studies or program reports.
Country	Country the article is from.
Study details	
Study design	Study design of empirical research articles, or evaluation design for program reports.
Participants	Characteristics of the study or program participants.
Intervention	Description of the intervention.
Intervention mechanism	Theory of change of intervention.
Intervention structure	Detailed intervention components, delivery and facilitators.
Intervention duration	Duration of intervention
Comparison	Description of any comparison groups.
Study outcomes and measures	List of outcomes and other measures assessed in study or program evaluation.
Findings	Main results of the study.
Recommendations	Authors recommendations based on findings or experiences.

264

265 **Data synthesis**

266 We will present the search and screening flow process (Figure 1). The findings from the scoping review
 267 will be presented in a table summarizing the information of each of the included studies to highlight year
 268 of the literature, countries of origin, intervention component, and research methods, following the
 269 general format of our charting table (Table 2). Additionally, we will present participant outcomes by type
 270 of intervention component, and by fistula etiology, if possible. Narrative summaries of each of these
 271 findings will accompany the figures/tables. Two reviewers (AE and CP) will thematically analyze the data
 272 within each of the subdomains outlined in Table 2, working together to consolidate the findings through
 273 consensus. Additional content experts with knowledge of obstetric fistula in global contexts (AD, SO, JB,
 274 AK, JKB) will be available to provide guidance during this step. The text will describe how the findings of
 275 the scoping review relate to the review objective and respond to each of the specific research questions.
 276 We will then discuss our recommendations for future research and next steps.

277 **Ethics and dissemination**

278
 279 No ethical review is required for a scoping review of the literature; thus, we have not sought ethics
 280 approval for our review.

281
 282 The proposed scoping review will help in understanding and describing what is known and unknown about
 283 rehabilitation and social reintegration of women following genital fistula surgery. We know that as a
 284 consequence of fistula, women are often stigmatized and marginalized from their community, with high
 285 rates of depression that persist even after surgical repair. While access to surgical care has improved,
 286 there is less known about the approach to post-surgical social services, including reintegration and
 287 rehabilitation. While there is a call in the literature for the need of post-surgical reintegration services,

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3 288 there is a dearth of information describing best practices or detailing the specific requirements needed
4 289 for a successful program.
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6 291 Results from this scoping review will be useful in developing social reintegration projects in areas where
7 292 fistula projects are ongoing. The results of this review can be used to inform policy and serve as support
8 293 for funding and development of reintegration programs. Furthermore, the results can highlight areas or
9 294 future research to pursue and help in building protocols for post-surgical rehabilitation and reintegration
10 295 programs throughout contexts where fistula is prevalent.

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13 296 The study may be limited by including only articles published in English and French as study eligibility
14 297 criteria and the lack of published articles on this topic. However, our scoping review will also include a
15 298 systematic approach to reviewing the gray literature, in hopes of capturing all relevant information. Even
16 299 in finding a deficit of published information, this scoping review may be a call for future published research
17 300 in the area of social reintegration and rehabilitation of women following genital fistula surgery.
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16 361 **Authors' contributions:** AE, JBy, SO and JBa conceived the project. AE, CP, and JBW drafted the protocol.
17 362 AE, CP, AD, JBW SO, JBy, AK, and JBa revised the protocol. All authors agreed upon the final protocol
18 363 version.
19 364

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22 367

23 368 **Competing interests statement.** The authors declare no competing or conflicts of interest.
24 369

25 370 **Figures**

26 371 **Figure 1.** PRISMA flowchart for selection of eligible studies and program reports.
27 372

28 373 **Supplemental files (Appendix):**

29 374 **Appendix 1.** List of organizational websites identified by the Campaign to End Fistula that will be
30 375 searched for relevant content.

31 376 **Appendix 2:** Search strategy for all databases
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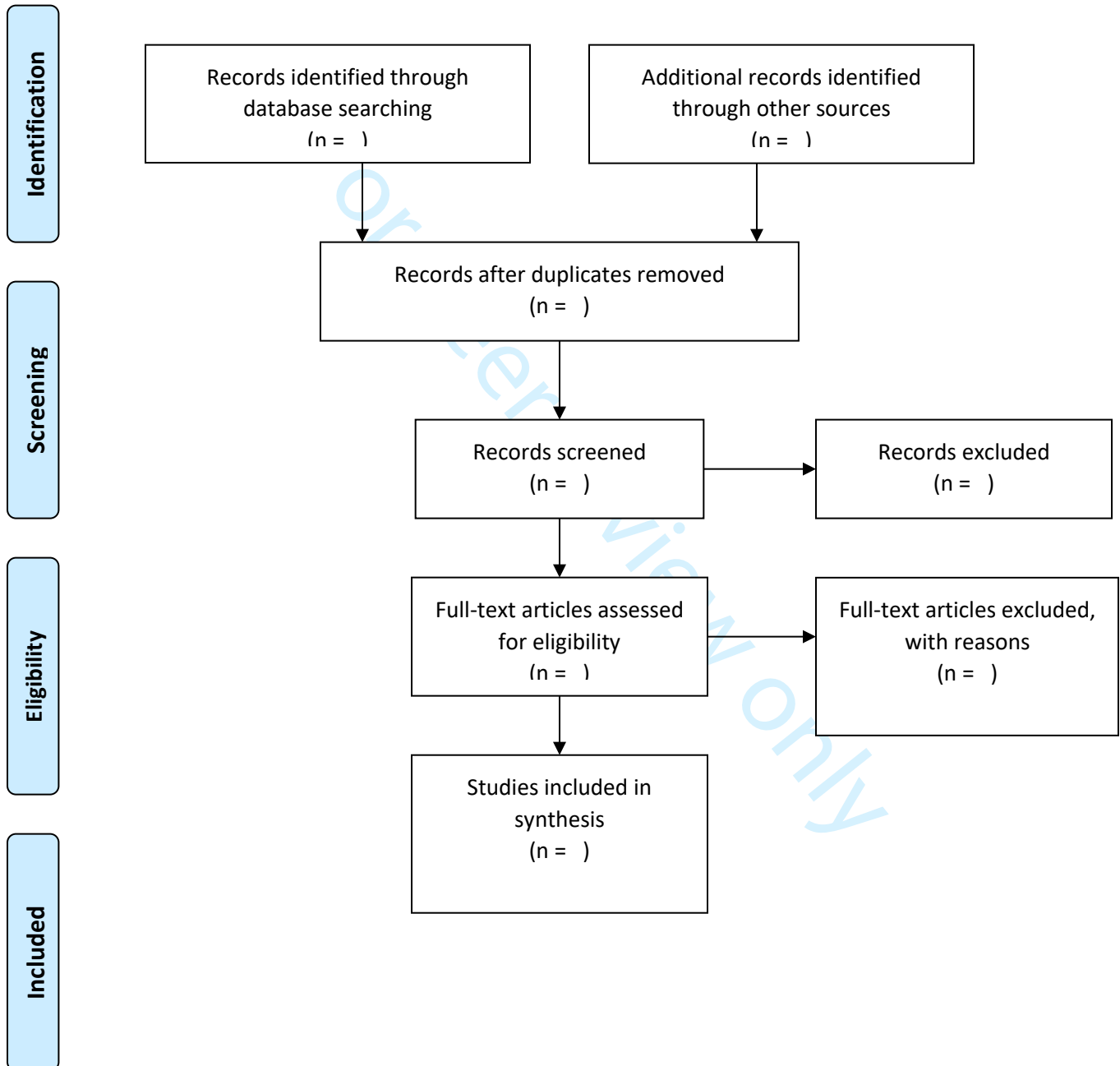
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For peer review only

Supplemental Files: Figures

Manuscript: Rehabilitation and Reintegration Programming Adjunct to Female Genital Fistula Surgery:
A Scoping Review Protocol

Fig 1. PRISMA flowchart for selection of eligible studies and program reports.^{17 26}



Supplemental Files: Appendices

Manuscript: Rehabilitation and Reintegration Programming Adjunct to Female Genital Fistula Surgery:
A Scoping Review Protocol

Appendix 1. List of organizational websites identified by the Campaign to End Fistula Partners (UNFPA)²⁵ that will be searched for relevant content.

- Aden Hospital (Yemen)
- African Medical and Research Foundation
- American College of Nurse-Midwives
- Babbar Ruga Fistula Hospital (Nigeria)
- Bangladesh Medical Association
- Bill & Melinda Gates Institute for Population and Reproductive Health
- Bugando Medical Center (United Republic of Tanzania) CARE
- Centers for Disease Control and Prevention (CDC)
- Centre Mère-Enfant (Chad)
- Centre National de Référence en Fistule Obstétricale (Niger)
- Centre National de Santé de la Reproduction & du Traitement des Fistules (Chad)
- Columbia University's Averting Maternal Death and Disability Program (AMDD)
- Comprehensive Community Based Rehabilitation in Tanzania (CCBRT)
- CURE International Hospital of Kabul (Afghanistan)
- Direct Relief International
- Dr. Abbo's National Fistula and Urogynaecology Center (Sudan)
- East Central and Southern Africa Association of Obstetrical and Gynecological Societies
- EngenderHealth
- Equilibres & Populations
- Eritrea Women's Project
- Family Care International
- Fistula e.V.
- Fistula Foundation
- Fistula Foundation Nigeria
- Freedom from Fistula Foundation
- Friends of UNFPA
- Geneva Foundation for Medical Education and Research
- Girls' Globe
- Governess Films
- Gynocare Fistula Center (Kenya)
- Hamlin Fistula (Ethiopia)
- Healing Hands of Joy (Ethiopia)
- Health and Development International
- Health Poverty Action (Sierra Leone)
- Hope Again Fistula Support Organization (Uganda)
- Human Rights Watch

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- Institut de Formation et de Recherche en Urologie et Santé de la Famille (IFRU-SF) (Senegal)
 - International Confederation of Midwives (ICM)
 - International Continence Society
 - International Federation of Gynecology and Obstetrics (FIGO)
 - International Forum of Research Donors (IFORD)
 - International Nepal Fellowship (INF)
 - International Planned Parenthood Federation (IPPF)
 - International Society of Obstetric Fistula Surgeons (ISOFS)
 - International Urogynecological Association (IUGA)
 - International Women's Health Coalition, Islamic Development Bank
 - Johns Hopkins Bloomberg School of Public Health
 - Johnson & Johnson
 - Kupona Foundation
 - Lake Tanganyika Floating Health Clinic
 - Ligue d'Initiative et de Recherche Active Pour la Santé et l'Éducation de la Femme (LIRASEF, Cameroon)
 - London School of Hygiene and Tropical Medicine
 - Maputo Central Hospital (Mozambique)
 - Médecins du Monde
 - Médecins Sans Frontières (MSF)
 - Mercy Ships
 - Moi University (Kenya)
 - Monze Hospital (Zambia)
 - Mulago Hospital/Medical School (Uganda)
 - National Obstetric Fistula Centre, Abakiliki (Nigeria)
 - Obstetrical and Gynecological Society of Bangladesh
 - One by One
 - Operation Fistula
 - Pakistan National Forum on Women's Health
 - Pan African Urological Surgeons' Association (PAUSA)
 - Population Media Center
 - Psychology Beyond Borders
 - Regional Prevention of Maternal Mortality Network (RPMM, Ghana)
 - Royal College of Obstetricians and Gynaecologists (RCOG)
 - Sana'a Hospital (Yemen)
 - Selian Fistula Project (United Republic of Tanzania)
 - Société Africaine des Gynécologues-Obstétriciens (SAGO)
 - Société Internationale d'Urologiel
 - Solidarité Femmes Africaines (SOLFA)
 - The Association for the Rehabilitation and Re-orientation of Women for Development (TERREWODE, Uganda)
 - Uganda Childbirth Injury Fund
 - United Nations Population Fund (UNFPA)

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- United States Agency for International Development (USAID)
 - University of Aberdeen
 - University Teaching Hospital of Yaoundé (Cameroon)
 - Virgin Unite
 - White Ribbon Alliance
 - Women and Health Alliance International (WAHA)
 - Women's Health Organization International (WHOI)
 - Women's Hope International (WHI)
 - Women's Missionary Society of the African Methodist Episcopal Church
 - World Health Organization (WHO)
 - World Vision
 - Worldwide Fistula Fund
 - Zonta International

Appendix 2. Search strategy for all databases. All searches will be limited to 2000-present.

Name of database	Search strategy
PubMed	<p data-bbox="540 306 1510 905">("obstetric fistula"[tiab] OR "obstetric fistulae"[tiab] OR "vaginal fistula"[tiab] OR "vaginal fistulae"[tiab] OR "vesicovaginal fistula"[tiab] OR "vesicovaginal fistulae"[tiab] OR "vesico-vaginal fistulae"[tiab] OR "obstetric fistulas"[tiab] OR "vaginal fistulas"[tiab] OR "vesicovaginal fistulas"[tiab] OR "vesico-vaginal fistulas"[tiab] OR "Vaginal Fistula"[Mesh] OR "ureterovaginal fistula"[tiab] OR "rectovaginal fistula"[tiab] OR "genital tract fistula"[tiab] OR "urinary fistula"[tiab] OR "uro-vaginal fistula"[tiab] OR "recto-vaginal fistula"[tiab] OR "ureterovaginal fistulae"[tiab] OR "rectovaginal fistulae"[tiab] OR "genital tract fistulae"[tiab] OR "urinary fistulae"[tiab] OR "ureterovaginal fistulas"[tiab] OR "rectovaginal fistulas"[tiab] OR "genital tract fistulas"[tiab] OR "urinary fistulas"[tiab] OR "uro-vaginal fistulas"[tiab] OR "recto-vaginal fistulas"[tiab] OR "bladder fistula"[tiab] OR "bladder fistulae"[tiab] OR "bladder fistulas"[tiab] OR "cystocolic fistula"[tiab] OR "cystocolic fistulae"[tiab] OR "cystocolic fistulas"[tiab] OR "cystovaginal fistula"[tiab] OR "cystovaginal fistulae"[tiab] OR "cystovaginal fistulas"[tiab] OR "ureter fistula"[tiab] OR "ureter fistulae"[tiab] OR "ureter fistulas"[tiab] OR "urethra fistula"[tiab] OR "urethra fistulae"[tiab] OR "urethra fistulas"[tiab])</p> <p data-bbox="540 947 602 974">AND</p> <p data-bbox="540 1016 1510 1545">(rehabilitation[tiab] OR "quality of life"[tiab] OR "Quality of Life"[Mesh] OR reintegration[tiab] OR rehabilitating[tiab] OR reintegrating[tiab] OR reintegrated[tiab] OR counseling[tiab] OR exercise[tiab] OR exercises[tiab] OR education[tiab] OR physiotherapy[tiab] OR knowledge[tiab] OR "self esteem"[tiab] OR "mental health"[tiab] OR "mental well-being"[tiab] OR psychological[tiab] OR behavioral[tiab] OR coping[tiab] OR depression[tiab] OR anxiety[tiab] OR suicidal[tiab] OR suicide[tiab] OR distress[tiab] OR stress[tiab] OR social[tiab] OR recovery[tiab] OR "skills training"[tiab] OR "gender-based"[tiab] OR power[tiab] OR "Power (Psychology)"[Mesh] OR empower[tiab] OR empowered[tiab] OR empowerment[tiab] OR livelihood[tiab] OR microfinance[tiab] OR financial[tiab] OR finance[tiab] OR "Socioeconomic Factors"[Mesh] OR "self help"[tiab] OR "self-help"[tiab] OR "Self Care"[Mesh] OR "Self-Management"[Mesh] OR training[tiab] OR mobility[tiab] OR independence[tiab] OR decision-making[tiab] OR respect[tiab])</p>
Embase	<p data-bbox="540 1587 1510 1898">(("obstetric fistula":ab,ti OR 'obstetric fistulae':ab,ti OR 'vaginal fistula':ab,ti OR 'vaginal fistulae':ab,ti OR 'vesicovaginal fistula':ab,ti OR 'vesicovaginal fistulae':ab,ti OR 'vesico-vaginal fistula':ab,ti OR 'vesico-vaginal fistulae':ab,ti OR 'obstetric fistulas':ab,ti OR 'vaginal fistulas':ab,ti OR 'vesicovaginal fistulas':ab,ti OR 'vesico-vaginal fistulas':ab,ti OR 'urinary tract fistula'/exp OR 'rectovaginal fistula'/exp OR 'ureterovaginal fistula':ab,ti OR 'rectovaginal fistula':ab,ti OR 'genital tract fistula':ab,ti OR 'urinary fistula':ab,ti OR 'uro-vaginal fistula':ab,ti OR 'recto-vaginal fistula':ab,ti OR 'ureterovaginal fistulae':ab,ti OR 'rectovaginal fistulae':ab,ti OR 'genital tract fistulae':ab,ti OR</p>

	<p>'urinary fistulae':ab,ti OR 'uro-vaginal fistulae':ab,ti OR 'recto-vaginal fistulae':ab,ti OR 'ureterovaginal fistulas':ab,ti OR 'rectovaginal fistulas':ab,ti OR 'genital tract fistulas':ab,ti OR 'urinary fistulas':ab,ti OR 'uro-vaginal fistulas':ab,ti OR 'recto-vaginal fistulas':ab,ti OR 'bladder fistula':ab,ti OR 'bladder fistulae':ab,ti OR 'bladder fistulas':ab,ti OR 'cystocolic fistula':ab,ti OR 'cystocolic fistulae':ab,ti OR 'cystocolic fistulas':ab,ti OR 'cystovaginal fistula':ab,ti OR 'cystovaginal fistulae':ab,ti OR 'cystovaginal fistulas':ab,ti OR 'ureter fistula':ab,ti OR 'ureter fistulae':ab,ti OR 'ureter fistulas':ab,ti OR 'urethra fistula':ab,ti OR 'urethra fistulae':ab,ti OR 'urethra fistulas':ab,ti)</p> <p>AND</p> <p>(rehabilitation:ab,ti OR 'quality of life':ab,ti OR reintegration:ab,ti OR rehabilitating:ab,ti OR reintegrating:ab,ti OR reintegrated:ab,ti OR counseling:ab,ti OR exercise:ab,ti OR exercises:ab,ti OR education:ab,ti OR physiotherapy:ab,ti OR knowledge:ab,ti OR 'self esteem':ab,ti OR 'mental health':ab,ti OR 'mental well-being':ab,ti OR psychological:ab,ti OR behavioral:ab,ti OR coping:ab,ti OR depression:ab,ti OR anxiety:ab,ti OR suicidal:ab,ti OR suicide:ab,ti OR distress:ab,ti OR stress:ab,ti OR social:ab,ti OR recovery:ab,ti OR 'skills training':ab,ti OR 'gender-based':ab,ti OR power:ab,ti OR 'empowerment'/exp OR empower:ab,ti OR empowered:ab,ti OR empowerment:ab,ti OR livelihood:ab,ti OR microfinance:ab,ti OR financial:ab,ti OR finance:ab,ti OR 'self help':ab,ti OR 'self-help':ab,ti OR 'self care'/exp OR training:ab,ti OR mobility:ab,ti OR independence:ab,ti OR decision-making:ab,ti OR respect:ab,ti OR 'social status'/exp))</p> <p>NOT</p> <p>(cancer:ab,ti OR 'neoplasm'/exp OR prostate:ab,ti OR 'prostate'/exp OR hypospadias:ab,ti OR 'hypospadias'/exp OR penile:ab,ti OR transgender:ab,ti OR 'gender confirming':ab,ti)</p>
Web of Science	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p>

	<p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR socioeconomic)</p> <p>NOT</p> <p>(cancer OR prostate OR hypospadias OR hypospadias OR penile OR transgender OR "gender confirming")</p>
Popline	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR socioeconomic)</p>
PsycINFO	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR</p>

	<p>"ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR MAINSUBJECT.EXACT("Quality of Life") OR MAINSUBJECT.EXACT("Empowerment") OR MAINSUBJECT.EXACT("Interpersonal Control"))</p>
<p>Sociological Abstracts & Social Services Abstracts</p>	<p>("obstetric fistula" OR "obstetric fistulae" OR "vaginal fistula" OR "vaginal fistulae" OR "vesicovaginal fistula" OR "vesicovaginal fistulae" OR "vesico-vaginal fistula" OR "vesico-vaginal fistulae" OR "obstetric fistulas" OR "vaginal fistulas" OR "vesicovaginal fistulas" OR "vesico-vaginal fistulas" OR "ureterovaginal fistula" OR "rectovaginal fistula" OR "genital tract fistula" OR "urinary fistula" OR "uro-vaginal fistula" OR "recto-vaginal fistula" OR "ureterovaginal fistulae" OR "rectovaginal fistulae" OR "genital tract fistulae" OR "urinary fistulae" OR "uro-vaginal fistulae" OR "recto-vaginal fistulae" OR "ureterovaginal fistulas" OR "rectovaginal fistulas" OR "genital tract fistulas" OR "urinary fistulas" OR "uro-vaginal fistulas" OR "recto-vaginal fistulas" OR "bladder fistula" OR "bladder fistulae" OR "bladder fistulas" OR "cystocolic fistula" OR "cystocolic fistulae" OR "cystocolic fistulas" OR "cystovaginal fistula" OR "cystovaginal fistulae" OR "cystovaginal fistulas" OR "ureter fistula" OR "ureter fistulae" OR "ureter fistulas" OR "urethra fistula" OR "urethra fistulae" OR "urethra fistulas")</p> <p>AND</p> <p>(rehabilitation OR "quality of life" OR reintegration OR rehabilitating OR reintegrating OR reintegrated OR counseling OR exercise OR exercises OR education OR physiotherapy OR knowledge OR "self esteem" OR "mental health" OR "mental well-being" OR psychological OR behavioral OR coping OR depression OR anxiety OR suicidal OR suicide OR distress OR stress OR social</p>

	OR recovery OR "skills training" OR "gender-based" OR power OR empower OR empowered OR empowerment OR livelihood OR microfinance OR financial OR finance OR "self help" OR "self-help" OR training OR mobility OR independence OR decision-making OR respect OR MAINSUBJECT.EXACT("Power") OR MAINSUBJECT.EXACT("Empowerment") OR MAINSUBJECT.EXACT("Social Power") OR MAINSUBJECT.EXACT("Quality of Life") OR MAINSUBJECT.EXACT("Rehabilitation"))
African Journals Online	fistula AND (rehabilitation OR reintegration OR education OR empowerment OR empower OR "self help" OR "quality of life" OR recovery OR reintegrated OR reintegrating OR power OR training OR coping OR mental OR decision OR counseling OR distress OR social)

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	X	<input type="checkbox"/>	2 (title) Line 52
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	X	
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input type="checkbox"/>	<input type="checkbox"/>	
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	X	<input type="checkbox"/>	Line 4-38
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	X	<input type="checkbox"/>	Line 361-363
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	<input type="checkbox"/>	X	
Support					
Sources	5a	Indicate sources of financial or other support for the review	X	<input type="checkbox"/>	Line 365-366
Sponsor	5b	Provide name for the review funder and/or sponsor	X	<input type="checkbox"/>	Line 365-366
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input type="checkbox"/>	X	
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	X	<input type="checkbox"/>	Line 127-129
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	X	<input type="checkbox"/>	Line 136-138
METHODS					

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 253
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 173-179
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Appendix 2 (line 466)
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Line 179
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 221-222
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 268-269
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 256-259, Table 2
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Table 2
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 222 and 270-271
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2 , Kendall's tau)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Line 263-273
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Line 224-225